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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
OLANIRAN, FATIMAT O	

ART UNIT	PAPER NUMBER
2615	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/520,201	AARTS ET AL.	
	Examiner	Art Unit	
	FATIMAT O. OLANIRAN	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04 January 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/7/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 9 is objected to because of the following informalities:

Claim 9, line 5, "...said successive distributions of noise level..." lacks antecedent basis. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. The term "similar" in claim 6 and 9 is a relative term which renders the claim indefinite. The term "similar" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Furthermore, the limitation in claim 6 and 9, "...to apply similar post-processing to said successive distributions of noise level as said post-processor..." is unclear. Applicant appears to be claiming the noise level detector and the masking threshold generator are functioning as the post-processor in that limitation, the intended meaning of the limitation is unclear to examiner and as a result this limitation has not been considered.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-3, 5, 8 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Akagiri et al (RE37864, reissue of US5204677)

Claim 1, Akagiri discloses an audio system comprising: a post-processor arranged to alter successive fragments of a decoded audio signal to provide successive fragments of post-processed audio signal (col. 9 line 57-61); a distortion detector for determining a degree to which quantization noise introduced in encoding said successive fragments of audio signal becomes audible due to said post-processing (Fig. 6 element, 12, 18 and col. 5 line 42-46); and a regulator arranged to control said post-processor according to said degree (Fig. 6, element 13 and col. 5 line 31-41).

Claim 2, Akagiri discloses a masking threshold generator arranged to provide an estimate of a masking threshold for said successive fragments of post-processed audio signal (col. 7 line 12-32); a noise level detector arranged to provide an

estimate of a noise level for said successive fragments of said post-processed audio signal (col. 5 line 42-46); and wherein said distortion detector determines said degree according to the degree to which said noise level exceeds said masking threshold for successive fragments of said post-processed audio signal (col. 5 line 39-41 and col. 7 line 48-52).

Claim 3 Akagiri discloses comprising a decoder arranged to read an audio stream and to produce said successive fragments of audio signal (col. 9 lines 47-55).

Claim 5, Akagiri discloses wherein said masking threshold generator comprises a psycho-acoustic modeling component arranged to transform said successive fragments of post-processed audio signal into the frequency domain; and to derive said masking threshold therefrom (col. 6 line 34-55 and col. 7 line 12-32).

Claim 8 Akagiri discloses in which said noise level detector is arranged to derive from said audio stream quantization levels employed in the encoding of an audio stream (Fig. 6 element 12, 13 and col. 5 lines 42-45).

Claim 10 Akagiri discloses a method of processing an audio stream (abstract) comprising the steps of: post-processing successive fragments of a decoded audio signal to provide successive fragments of post-processed audio signal (col. 9 line 57-61); detecting a degree to which quantization noise introduced in encoding said successive fragments of audio signal becomes audible due to said post-processing; and regulating said post-processing step according to said degree (Fig. 6 and col. 5 line 26-45).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Akagiri et al (RE37864) in view of Kirkeby (6928168).

Claim 4 analyzed with respect to claims 1-3, Akagiri does not explicitly disclose wherein said decoder produces stereo-encoded successive pairs of fragments of audio signal.

However, Akagiri discloses wherein said decoder produces audio from CD players (col. 9 line 47-50). Therefore it would be obvious to one of ordinary skill in the art at the time of the invention that audio encoded on a CD is stereo audio.

Akagiri does not disclose said post-processor applies stereo-widening to said successive pairs of fragments of audio signal.

Kirkeby discloses a processor that applies stereo-widening (abstract).

Therefore it would be obvious to one of ordinary skill in the art at the time the invention was made to modify the reproducing circuit of Akagiri with the stereo widening process of Kirkeby so that a listener can enjoy high quality and a more spatial sound.

5. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Akagiri et al (RE37864).

Claim 6 analyzed with respect to claim 2 and 1, Akagiri discloses wherein said masking threshold generator comprises a psycho-acoustic modeling component arranged to read said audio stream and to produce successive fragments of audio signal (Fig. 6 elements 16, 17 and col. 6 line 34-60); to transform said successive post-processed fragments of audio signal into the frequency domain (col. 6 line 34-60); and to derive said masking threshold from said signal (col. 7 line 11-35).

Akagiri does not explicitly disclose and to derive said masking threshold from said post-processed signal. However Akagiri discloses incorporating the quantizing error reducer in a post-processing circuit (Fig. 16 and col. 10 line 15-29). Therefore it would be obvious to one of ordinary skill in the art at the time the invention was made that the derivation of the masked threshold would be with a post-processed signal.

6. Claims 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akagiri al (RE37864) in view of Moehrs et al (Analysing decompressed audio with the "Inverse Decoder"-towards an Operative Algorithm).

Claim 7 analyzed with respect to claim 2 and 1, Akagiri discloses to provide indications of quantization levels employed in the encoding of an audio stream from which said audio signal is decoded (Fig. 6 element 12 and Fig. 16. and col. 10 line 15-29)

Akagiri does not disclose an inverse decoder.

Moehrs discloses an inverse decoder (page 8, column 2, Section Conclusion).

Therefore it would be obvious to one of ordinary skill in the art at the time the invention was made to modify the noise reducer of Akagiri with the inverse decoder of Moehrs in order to be able to recover the encoded compression parameters as taught by Moehrs (abstract).

Claim 9 analyzed with respect to claim 7, 2 and 1, Akagiri discloses in which said noise level detector is arranged to derive from said quantization levels a distribution of noise level in the frequency domain for said successive fragments of a audio signal and to provide successive estimates of noise level for said successive fragments of said audio signal (Fig. 6 and col. 5 line 41-47).

Akagiri does not explicitly disclose for said successive fragments of a decoded audio signal and for said successive fragments of said post-processed audio signal. However Akagiri discloses incorporating the quantizing error reducer in a post-processing circuit (Fig. 16 and col. 10 line 15-29). Therefore it would be obvious to one of ordinary skill in the art at the time the invention was made that noise level detector is applicable before or after decoding and during post-processing.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Johnston (5481614)

Subramaniam et al (6950794)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to FATIMAT O. OLANIRAN whose telephone number is (571)270-3437. The examiner can normally be reached on M-F 10:00-6 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

FO

/Vivian Chin/
Supervisory Patent Examiner, Art Unit 2615